SIEMENS

# POLYTRON.NIU
# (Network Interface Unit)

[redacted] AX

# DICOM Conformance Statement

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## Preface

The intent of any DICOM conformance statement is to provide a knowledgeable user with the information required to determine whether and to what extent independent DICOM implementations may be able to inter-operate. However, the information contained in a DICOM conformance statement is not sufficient to ensure independent implementations will, in fact, be able to inter-operate.

The user or system integrator must be aware of the following potential issues related to inter-operation:

- Using only the information provided by this Conformance Statement does not guarantee interoperability of the Siemens equipment described herein with other equipment. It is the user's (or system integrator's) responsibility to analyze thoroughly the application requirements and objectives to determine if they can be met by the connection of Siemens equipment to other equipment.

- Siemens equipment has been tested to assure that the actual implementation of the DICOM interface corresponds with this Conformance statement. It is the responsibility of the user (or system integrator) to specify and carry out additional validation testing, which covers a broad spectrum of potential interactions between the independent implementations.

- Siemens reserves the right to make changes to its products or to discontinue their delivery. Therefore, the user (or system integrator) should ensure that any future versions of Siemens or other connected equipment are regression tested to verify that new software releases have not adversely impacted the ability to inter-operate.

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Siemens reserves the right to correct this publication and to make changes to its contents without the obligation of informing anyone of these revisions or changes.

# 0 Introduction

This document provides the conformance statement for the POLYTRON T.O.P. Network Interface Unit (POLYTRON.NIU) product. Its purpose is to allow users of the NIU to determine which optional components of the DICOM Standard are supported, including Service Classes, SOP Classes, communication protocols, roles, optional (Type 3) Attributes, etc.

The POLYTRON.NIU provides a network interface between labs based on POLYTRON T.O.P. and a DICOM destination.

Siemens has tested and approved this connection with the ACOM.net Cardiac network, LEONARDO Workstation and a general DICOM destination.

The POLYTRON T.O.P. addresses the NIU with the logical device-id of “DICOM NET”.

# 1 Implementation Model

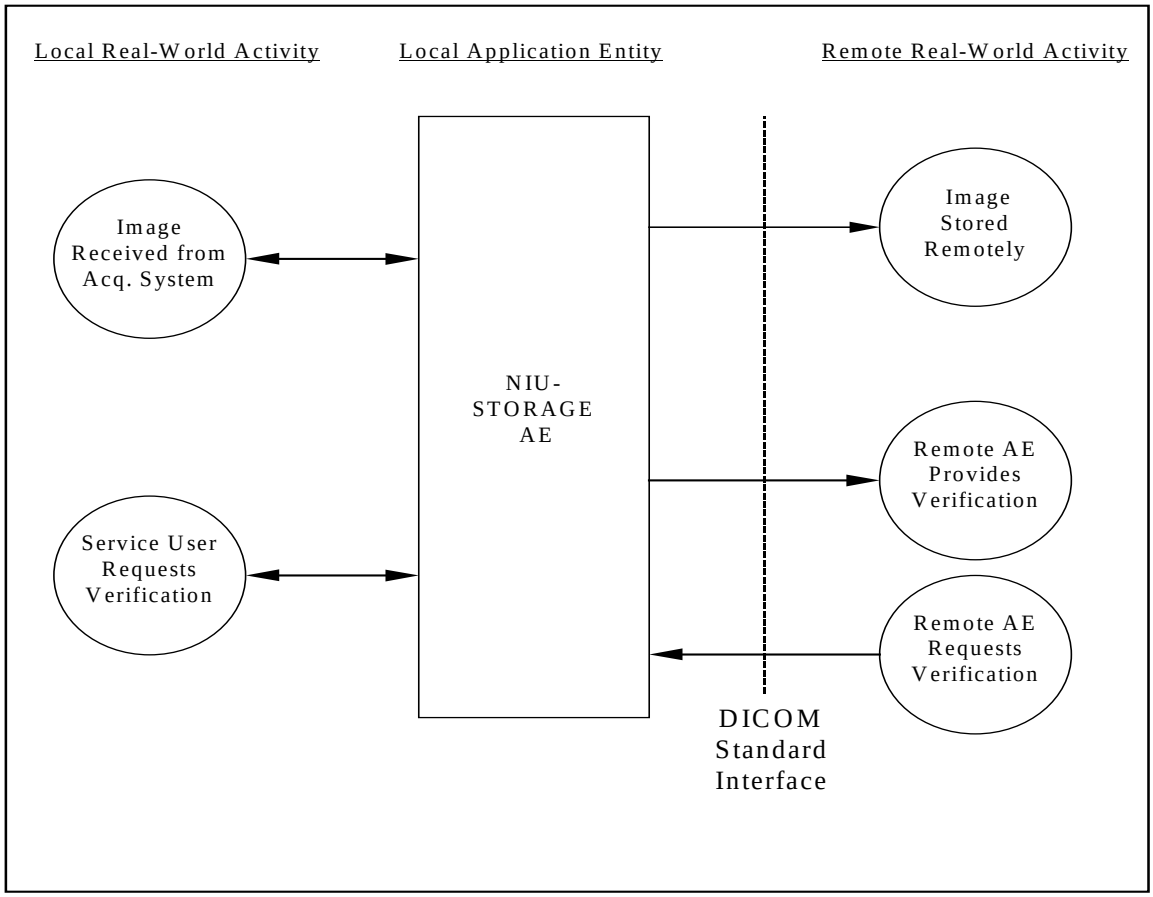
## 1.1 Application Data Flow Diagram

The NIU implementation consists of a single Application Entity called “NIU-STORAGE”. The NIU-STORAGE AE provides all of the DICOM services for the NIU.

The following Application Data Flow Diagram depicts the relationship of the AE's use of DICOM to Real-World Activities. As documented in the PS3.2-1999 DICOM standard, the symbols used in this diagram have the following meanings:

- A double-headed arrow between a local real-world activity and the local application entity indicates a relationship between them (such as user interaction).
- An arrow from the local application entity to the remote real-world activity indicates that an occurrence of the local real-world activity will cause the local application entity to initiate an association for the purpose of causing the remote real-world activity to occur.
- An arrow from the remote real-world activity to the local application entity indicates that the local application entity expects to receive an association request when the remote real-world activity occurs, causing the local application entity to perform the local real-world activity.

**Figure 1**
**Implementation Model**




## 1.2 Functional Definition of Application Entities

The NIU-STORAGE AE provides all of the necessary functionality to implement network sending of the DICOM images. This includes, but is not limited to:

- association management
- image and demographics encoding
- image and demographics storage
- response interpretation
- communication readiness verification

## 1.3 Sequencing of Real-World Activities

Not Applicable.

# 2 Application Entity Specifications

The NIU is comprised of a single Application Entity, the NIU-STORAGE AE.

## 2.1 NIU-STORAGE Application Entity Specification

The NIU-STORAGE AE provides Standard Conformance to the following DICOM V3.0 SOP Classes as a Service Class User (SCU):

**Table 1**
**Supported SOP Classes as SCU**

| SOP Class Name | SOP Class UID |
|---|---|
| Verification | 1.2.840.10008.1.1 |
| X-Ray Angiographic Image Storage | 1.2.840.10008.5.1.4.1.1.12.1 |

The NIU-STORAGE AE also provides Standard Conformance to the following DICOM V3.0 SOP Classes as a Service Class Provider (SCP):

**Table 2**
**Supported SOP Classes as SCP**

| SOP Class Name | SOP Class UID |
|---|---|
| Verification | 1.2.840.10008.1.1 |

### 2.1.1 Association Establishment Policies

#### 2.1.1.1 General

The NIU-STORAGE AE will always propose the DICOM Application Context Name (ACN), which is:

| | |
|---|---|
| Application Context Name | 1.2.840.10008.3.1.1.1 |

The maximum PDU lengths accepted by the NIU-STORAGE AE when acting as either an SCP or an SCU are configurable (refer to Section 5.2).

#### 2.1.1.2 Number of Associations

The maximum number of simultaneous associations supported by the NIU-STORAGE AE, both proposed and accepted, is configurable. The maximum number of simultaneous associations proposed by the NIU-STORAGE AE is also configurable (refer to Section 5.2).

#### 2.1.1.3 Asynchronous Nature

Multiple outstanding transactions are not supported by the NIU-STORAGE AE.

#### 2.1.1.4 Implementation Identifying Information

The NIU-STORAGE AE will provide the following Implementation Identifying Information in the User Information Field of the A-ASSOCIATE request primitive during association establishment:

**Table 3**
**Implementation Identifying Information**

| | |
|---|---|
| Implementation Class UID | 1.2.840.113697.10.8 |
| Implementation Version Name | "UDIG_v2.0.003" * |

* The Implementation Version Name is formed by appending the software version to the end of the string "UDIG_v". This is an example corresponding to software version 2.0.003.

### 2.1.2 Association Initiation Policy

The NIU-STORAGE AE initiates associations for the following real-world activities:

- A service operator wants to verify communication with a Remote DICOM AE or, as part of NIU's normal operation, the NIU periodically wants to verify communication with the Image Destination Remote DICOM AE
- An image is received from an in-lab acquisition system for translation and transfer to the Image Destination Remote DICOM AE

#### 2.1.2.1 Real-World Activity *"Verify Communication With Remote AE"*

##### 2.1.2.1.1 Associated Real-World Activity

A service operator invokes a command from the NIU console using the UDIG Config configuration tool to verify communications with a Remote DICOM AE. The operator selects the Remote AE to be checked. The NIU-STORAGE AE will also perform Verification on a periodic basis, without any associated local Real-World Activity. This polling interval is configurable (refer to Section 5.2).

##### 2.1.2.1.2 Proposed Presentation Contexts

The following table presents the Presentation Contexts, which are proposed by the NIU-STORAGE AE for Real-World Activity *"Verify Communication With Remote AE"*. Presentation Contexts containing XA Image Storage are proposed in addition to Verification for the purpose of determining the communication readiness of SCPs that do not support the Verification SOP class. Such a SCP will accept only an XA PC item, which the NIU interprets as the SCP being "alive". The association is then released without performing any operation upon it.

**Table 4**
**Presentation Context Table**
**for Real-World Activity**
***"Verify Communication With Remote AE"***

| Abstract Syntax | | Transfer Syntax | | Role | Extended Negotiation |
|---|---|---|---|---|---|
| **Name** | **UID** | **Name** | **UID** | | |
| Verification | 1.2.840.10008.1.1 | Implicit VR Little Endian | 1.2.840.10008.1.2 | SCU | None |
| X-Ray Angiographic Image Storage | 1.2.840.10008.5.1.4.1.1.12.1 | JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 11 [Selection Value 1]) | 1.2.840.10008.1.2.4.70 | SCU | None |
| | | Explicit VR Little Endian | 1.2.840.10008.1.2.1 | SCU | None |
| | | Implicit VR Little Endian | 1.2.840.10008.1.2 | SCU | None |

#### 2.1.2.1.2.1 SOP Specific Conformance for Verification SOP Class

The NIU-STORAGE AE provides standard conformance to the Verification SOP class.

### 2.1.2.2 Real-World Activity *"Image Received from Acquisition System"*

#### 2.1.2.2.1 Associated Real-World Activity

After an image is received from Polytron T.O.P. system, the NIU-STORAGE AE initiates a new association with a pre-configured Image Destination Remote DICOM AE on which the image is transferred for storage.

#### 2.1.2.2.2 Proposed Presentation Contexts

The following table presents the Presentation Contexts, which are proposed by the NIU-STORAGE AE for Real-World "Activity *Image Received from Acquisition System"*.

**Table 5**
**Presentation Context Table**
**for Real-World Activity**
***Image Received from Acquisition System***

| Abstract Syntax | | Transfer Syntax | | Role | Extended Negotiation |
|---|---|---|---|---|---|
| **Name** | **UID** | **Name** | **UID** | | |
| X-Ray Angiographic Image Storage | 1.2.840.10008.5.1.4.1.1.12.1 | JPEG Lossless, Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1])* | 1.2.840.10008.1.2.4.70 | SCU | None |
| | | Explicit VR Little Endian* | 1.2.840.10008.1.2.1 | SCU | None |
| | | Implicit VR Little Endian* | 1.2.840.10008.1.2 | SCU | None |

* The JPEG14 transfer syntax is only proposed for non-Photofile images (i.e., when the source image transfer syntax is JPEG14). The IVR-LE transfer syntax is not proposed for certain Image Destinations to preserve private element explicit VRs.

#### 2.1.2.2.2.1 SOP Specific Conformance for XA Image Storage SOP Class

The SOP Specific Conformance for the X-Ray Angiographic Image Storage SOP Class is detailed here.

When a “Success” (0000) or “Warning” (Bxxx) response status to a C-STORE operation is received by the NIU-STORAGE AE, the transmission is assumed to be successful and the association is released. A “Success” status is then returned to the in-lab acquisition system. In the case of a “Warning” status, the exact status returned by the Remote AE is logged in the NIU event log.

When a “Refused” or “Error” response status to a C-STORE operation is received by the NIU-STORAGE AE, the association is released and an error status is returned to the POLYTRON T.O.P. system. The exact status returned by the Remote AE is logged in the NIU event log.

*The tables listed in the Appendix give detailed information about the Attributes included when the NIU-STORAGE AE sends a POLYTRON T.O.P. XA SOP Instance.*

### 2.1.3 Association Acceptance Policy

The NIU-STORAGE AE accepts associations for the following real-world activities:

- A Remote DICOM AE wants to verify communication with the NIU-STORAGE AE

#### 2.1.3.1 Real-World Activity *"Verify Communication For Remote AE"*

##### 2.1.3.1.1 Associated Real-World Activity

The NIU-STORAGE AE will respond automatically to Verification requests from Remote AEs to provide an SCU with verification that the NIU-STORAGE AE is able to receive DICOM requests. This is typically initiated by an operator at the Remote AE.

##### 2.1.3.1.2 Presentation Context Table

The following table presents the Presentation Contexts, which are acceptable to the NIU-STORAGE AE for Real-World Activity *"Verify Communication For Remote AE"*:

**Table 6**
**Presentation Context Table**
**for Real-World Activity**
***"Verify Communication For Remote AE"***

| Abstract Syntax | | Transfer Syntax | | Role | Extended Negotiation |
|---|---|---|---|---|---|
| **Name** | **UID** | **Name** | **UID** | | |
| Verification | 1.2.840.10008.1.1 | Implicit VR Little Endian | 1.2.840.10008.1.2 | SCP | None |

###### 2.1.3.1.2.1 SOP Specific Conformance for Verification SOP Class

The NIU-STORAGE AE provides standard conformance to the Verification SOP class.

##### 2.1.3.1.3 Presentation Context Acceptance Criterion

Not applicable.

##### 2.1.3.1.4 Transfer Syntax Selection Policies

Not applicable.

# 3 Communication Profiles

The NIU provides only DICOM V3.0 TCP/IP Network Communication Support as specified in PS3.8 (DICOM Part 8). Neither the OSI nor point-to-point stacks are supported with this implementation.

## 3.1 TCP/IP Stack

The TCP/IP stack used by this implementation is inherited from the Microsoft Windows NT operating system on which it executes.

### 3.1.1 API

Not applicable.

### 3.1.2 Physical Media Support

The NIU provides support for DICOM Network Communication on the following physical media:

- IEEE 802.3u-1995 (Fast Ethernet) on Twisted Pair cable (100BASE-TX)

# 4 Extensions/Specializations/Privatizations

## 4.1 Standard Extended/Specialized/Private SOPs

Please see Appendix for details on the Standard Extended SOP Class sent by POLYTRON.NIU.

## 4.2 Private Transfer Syntaxes

Not applicable.

# 5 Configuration

The NIU maintains configuration data in the Windows NT Registry, which is saved on local disk storage. A service person may configure the NIU using the local UDIG Config and standard Windows NT configuration tools.

## 5.1 AE Title/Presentation Address Mapping

The default AE Title of the NIU-STORAGE AE is “UDIG100_1” and is configurable. The IP address and TCP Listen port of the NIU are also configurable.

The AE Title, IP address and TCP Listen port for the Remote DICOM AE are configurable on the NIU.

The mapping of AE Titles to TCP/IP addresses and ports is kept in a Host Registry, which is maintained in the Windows NT Registry, and can be edited using the UDIG Config configuration tool.

## 5.2 Configurable Parameters

- Image Source (POLYTRON T.O.P.), configured via license file
- Image Destination (“ACOM.net”, “LEONARDO Workstation”, "GE ARM" (GEMnet), "Generic DICOM", "Camtronics Vericis Server", "Inturis Suite"), configured via Config tool
- Time-outs: Association (ARTIM) Timer (default = 30 seconds), Command Read Timer (default = 60 seconds), Command Write Timer (default = 30 seconds), Data

Read Timer (default = 60 seconds), Data Write Timer (default = 120 seconds), Open Connection Timer (default = 20 seconds), Close Connection Timer (default = 20 seconds).

- Maximum PDU Length: SCP (default = 128 KBytes), SCU (default = 128 KBytes)
- Number of simultaneous associations supported (both accepted and proposed) (default = 20)
- Number of simultaneous associations proposed / C-STORE transfers (default = 2 for “ACOM.net”, “GE ARM” and “Camtronics Vericis Server” else default = 1, range = 1 - 9)
- Image Destination C-ECHO Polling Interval in seconds (default = 60, range = 10 - 300)
- Duplicate SOP Instance C-STORE Status code of Image Destination (default = $C111_{hex}$ for GEMnet, else default is $FFFFFFFF_{hex}$ [none] )
- Number of C-STORE retries that will be made to overcome transient communication errors with the Image Destination (default = -1 [infinite] )

# 6 Support of Extended Character Sets

This implementation supports the following extended character set:

- ISO-IR 100 (as defined in ISO 8859, Part 1 - Latin alphabet No. 1)

# 7 Appendix: Supported Attributes

**X-RAY ANGIOGRAPHIC IMAGE**

| Attribute Name | Tag | Value |
|---|---|---|
| Specific Character Set | [0008,0005] | ISO_IR 100 |
| Image Type | [0008,0008] | ORIGINAL\PRIMARY\SINGLE PLANE or ORIGINAL\PRIMARY\SINGLE PLANE\SINGLE A or ORIGINAL\PRIMARY\SINGLE PLANE\SINGLE B or ORIGINAL\PRIMARY\BIPLANE A or ORIGINAL\PRIMARY\BIPLANE B |
| SOP Class UID | [0008,0016] | 1.2.840.10008.5.1.4.1.1.12.1 |
| SOP Instance UID | [0008,0018] | 1.3.12.2.1107.5.4.1.<id>.<yyyymmdd>.<hhmmss>.<N> |
| Study Date | [0008,0020] | <yyyymmdd> |
| Image Date | [0008,0023] | <yyyymmdd> |
| Study Time | [0008,0030] | <hhmmss> |
| Image Time | [0008,0033] | <hhmmss> |
| Accession Number | [0008,0050] | <from RIS or Zero length> |
| Modality | [0008,0060] | XA |
| Manufacturer | [0008,0070] | SIEMENS |
| Institution Name | [0008,0080] | <from system configuration> |
| Institution Address | [0008,0081] | Zero length |
| Referring Physician's Name | [0008,0090] | <max. 64 char, "^" delimiter, from RIS> |
| Study Description | [0008,1030] | Zero length |
| Performing Physicians Name | [0008,1050] | <from input, default from RIS> |
| Manufacturer's Model Name | [0008,1090] | POLYTRON-TOP if all image data was generated on the Polytron, omitted if data came from ACOM |
| Referenced Image Sequence | [0008,1140] | Only if Image Type indicates BIPLANE |
| >Referenced SOP Class UID | [0008,1150] | 1.2.840.10008.5.1.4.1.1.12.1 |
| >Referenced SOP Instance UID | [0008,1155] | |
| Private Creator | [0009,0010] | POLYTRON-SMS 2.5 |
| Private Data 1 | [0009,1002] | Private data stream |
| Private Data 2 | [0009,1003] | Private data stream |
| Private Data 3 | [0009,1004] | Private data stream |
| Private Data 4 | [0009,1010] | Filter values (native:sub) |
| Private Data 5 | [0009,1011] | Window brightness, only if subtracted |
| Private Data 6 | [0009,1012] | Window contrast, only if subtracted |
| Patient's Name | [0010,0010] | <max. 64 char, "^" delimiter, or from RIS> |
| Patient ID | [0010,0020] | <max 64 char, or from RIS> |

| | | |
|---|---|---|
| Patient's Birth Date | [0010,0030] | <yyyymmdd, or from RIS> |
| Patient's Sex | [0010,0040] | M or F or O (or from RIS) |
| Patient's Weight | [0010,1030] | <user input, or from RIS> (in kilograms) |
| KVP | [0018,0060] | <peak KV used> (KV) |
| Device Serial Number | [0018,1000] | |
| Software Version(s) | [0018,1020] | Software version with link date and time: "V3.0 yyyy-mm-dd hh:mm:ss" |
| Frame Time | [0018,1063] | (ms) |
| Exposure | [0018,1152] | (mAs) |
| Radiation Setting | [0018,1155] | GR |
| Positioner Motion | [0018,1500] | STATIC |
| Positioner Primary Angle | [0018,1510] | (degrees) |
| Positioner Secondary Angle | [0018,1511] | (degrees) |
| Private Creator | [0019,0010] | CARDIO-D.R. 1.0 |
| Maximum Frame Size | [0019,1030] | |
| Study Instance UID | [0020,000D] | 1.3.12.2.1107.5.4.1.<id>.<yyyymmdd>.<hhmmss>.<N> or from RIS |
| Series Instance UID | [0020,000E] | 1.3.12.2.1107.5.4.1.<id>.<yyyymmddhhmmss> |
| Study ID | [0020,0010] | System generated |
| Series Number | [0020,0011] | 1 |
| Instance Number | [0020,0013] | Scene number |
| Patient Orientation | [0020,0020] | (always zero length) |
| Image Comments | [0020,4000] | <scene name> |
| Private Creator | [0021,0010] | CARDIO-D.R. 1.0 |
| Image Sequence Number | [0021,1013] | |
| Samples per Pixel | [0028,0002] | 1 |
| Photometric Interpretation | [0028,0004] | MONOCHROME2 |
| Number of Frames | [0028,0008] | <actual number of frames> |
| Frame Increment Pointer | [0028,0009] | 00181063 |
| Rows | [0028,0010] | 512, 1024 |
| Columns | [0028,0011] | 512, 1024 |
| Pixel Spacing | [0028,0030] | If available from auto calibration |
| Bits Allocated | [0028,0100] | 8, 16 |
| Bits Stored | [0028,0101] | 8, 10 |
| High Bit | [0028,0102] | 7, 9 |
| Pixel Representation | [0028,0103] | 0 |
| Pixel Intensity Relationship | [0028,1040] | LIN or LOG |
| Window Center | [0028,1050] | Default value of 128/512 for subtracted cardiac/angio scenes |
| Window Width | [0028,1051] | Default value of 100/400 for subtracted cardiac/angio scenes |
| Recommended Viewing Mode | [0028,1090] | SUB or NAT |
| Lossy Image Compression | [0028,2110] | 00 |
| Modality LUT Sequence | [0028,3000] | If Pixel Intensity Relationship is LOG |

| | | |
|---|---|---|
| >LUT Descriptor | [0028,3002] | 256, 0, 8 or 1024, 0, 16 |
| >Modality LUT Type | [0028,3004] | US |
| >LUT Data | [0028,3006] | |
| Mask Subtraction Sequence | [0028,6100] | |
| >Mask Operation | [0028,6101] | NONE or AVG_SUB |
| >Mask Frame Numbers | [0028,6110] | |
| >Mask Sub Pixelshift | [0028,6114] | |
| Private Creator | [0029,0010] | CARDIO-D.R. 1.0 |
| Edge Enhancement Sequence | [0029,1000] | |
| >Private Creator | [0029,0010] | CARDIO-D.R. 1.0 |
| >Convolution Kernel Size | [0029,1001] | |
| >Convolution Kernel Coefficients | [0029,1002] | |
| >Edge Enhancement Gain | [0029,1003] | |
| Edge Enhancement Gain | [0029,1003] | |
| Requesting Physician | [0032,1032] | <Zero length or from RIS> |
| Request Attributes Sequence | [0040,0275] | <only if patient from RIS> |
| >Scheduled Procedure Step ID | [0040,0009] | <from RIS or no Sequence> |
| >Requested Procedure ID | [0040,1001] | <from RIS or no Sequence> |
| Calibration Image | [0050,0004] | <Zero length> |
| Private Creator | [0089,0010] | POLYTRON-SMS 2.5 |
| Private Data | [0089,1010] | |
| Pixel Data | [7FE0,0010] | |

**PHOTOFILE**

| **Attribute Name** | **Tag** | **Value** |
|---|---|---|
| Specific Character Set | [0008,0005] | ISO_IR 100 |
| Image Type | [0008,0008] | DERIVED\PRIMARY\SINGLE PLANE\SINGLE A or DERIVED\PRIMARY\SINGLE PLANE\SINGLE B |
| SOP Class UID | [0008,0016] | 1.2.840.10008.5.1.4.1.1.12.1 |
| SOP Instance UID | [0008,0018] | 1.3.12.2.1107.5.4.1.<id>.<yyyymmdd>.<hhmmss>.<N> |
| Study Date | [0008,0020] | <yyyymmdd> |
| Image Date | [0008,0023] | <yyyymmdd> |
| Study Time | [0008,0030] | <hhmmss> |
| Image Time | [0008,0033] | <hhmmss> |
| Accession Number | [0008,0050] | <from RIS or Zero length> |
| Modality | [0008,0060] | XA |
| Manufacturer | [0008,0070] | SIEMENS |
| Institution Name | [0008,0080] | <from system configuration> |
| Institution Address | [0008,0081] | Zero length |
| Referring Physician's Name | [0008,0090] | <max. 64 char, "^" delimiter, from RIS> |

| | | |
|---|---|---|
| Study Description | [0008,1030] | Zero length |
| Performing Physicians Name | [0008,1050] | <from input, default from RIS> |
| Manufacturer's Model Name | [0008,1090] | POLYTRON-TOP if all image data was generated on the Polytron, omitted if data came from ACOM |
| Private Creator | [0009,0010] | POLYTRON-SMS 2.5 |
| Private Data 1 | [0009,1002] | Private data stream |
| Private Data 2 | [0009,1004] | Private data stream |
| Private Data 3 | [0009,1006] | Private data stream |
| Patient's Name | [0010,0010] | <max. 64 char, "^" delimiter, or from RIS> |
| Patient ID | [0010,0020] | <max 64 char, or from RIS> |
| Patient's Birth Date | [0010,0030] | <yyyymmdd, or from RIS> |
| Patient's Sex | [0010,0040] | M or F or O (or from RIS) |
| Patient's Weight | [0010,1030] | <user input, or from RIS> (in kilograms) |
| KVP | [0018,0060] | <peak KV used, zero length> (KV) |
| Device Serial Number | [0018,1000] | |
| Software Version(s) | [0018,1020] | Software version with link date and time: "V3.0 yyyy-mm-dd hh:mm:ss" |
| Exposure | [0018,1152] | <Zero Length> (mAs) |
| Radiation Setting | [0018,1155] | GR |
| Positioner Motion | [0018,1500] | STATIC |
| Positioner Primary Angle | [0018,1510] | (degrees) |
| Positioner Secondary Angle | [0018,1511] | (degrees) |
| Study Instance UID | [0020,000D] | 1.3.12.2.1107.5.4.1.<id>.<yyyymmdd>.<hhmmss>.<N> or from RIS |
| Series Instance UID | [0020,000E] | 1.3.12.2.1107.5.4.1.<id>.<yyyymmddhhmmss> |
| Study ID | [0020,0010] | System generated |
| Series Number | [0020,0011] | 1 |
| Instance Number | [0020,0013] | Photofile number |
| Patient Orientation | [0020,0020] | (always zero length) |
| Samples per Pixel | [0028,0002] | 1 |
| Photometric Interpretation | [0028,0004] | MONOCHROME2 |
| Number of Frames | [0028,0008] | 1 |
| Rows | [0028,0010] | 1024 |
| Columns | [0028,0011] | 1024 |
| Pixel Spacing | [0028,0030] | If available from auto calibration |
| Bits Allocated | [0028,0100] | 16 |
| Bits Stored | [0028,0101] | 10 |
| High Bit | [0028,0102] | 9 |
| Pixel Representation | [0028,0103] | 0 |
| Pixel Intensity Relationship | [0028,1040] | DISP |
| Window Center | [0028,1050] | 512 |
| Window Width | [0028,1051] | 1024 |
| Recommended Viewing Mode | [0028,1090] | NAT |

| | | |
|---|---|---|
| Requesting Physician | [0032,1032] | <Zero length or from RIS> |
| Request Attributes Sequence | [0040,0275] | <only if patient from RIS> |
| >Scheduled Procedure Step ID | [0040,0009] | <from RIS or no Sequence> |
| >Requested Procedure ID | [0040,1001] | <from RIS or no Sequence> |
| Calibration Image | [0050,0004] | <Zero length> |
| Private Creator | [0089,0010] | POLYTRON-SMS 2.5 |
| Private Data | [0089,1010] | |
| Pixel Data | [7FE0,0010] | |